

Evaluating Safe Patient Handling Systems: Is There A Better Way?

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ABSTRACT

Injuries suffered by staff and patients due to patient handling are preventable with changes in workplace culture. “No Lifting” policies have been adopted yet healthcare organizations consistently sit amongst the top three worst performing industries for disabling injuries. A factor that contributes to this situation is the lack of tools for evaluating patient handling systems that include workplace culture and climate. This observational study analyzes the responses of 38 nurses from two similar units that use different patient handling systems to test the reliability and validity of the Safe Patient Handling Survey™ (SPH Survey™), a perception survey and improvement tool for employees and employers.

The data were analyzed for correlations between SPH Survey™ scores and incidents, and its ability to detect differences between the two units. The results of the Pearson and Cronbach’s alpha tests show strong reliability, validity and consistency of the SPH Survey™. ANOVA comparison of means and Spearman’s rho tests shows that higher (better) scores on the SPH Survey™ clusters correlate with lower numbers of patient injuries, lower reports of verbal and physical violence episodes, and lower staff injuries. Differences were detected between the units with Unit 2 scoring higher than Unit 1 in all SPH Survey™ clusters and scoring lower in staff and patient injuries and violence incidents. Although the analysis was limited by the small sample size, the study is a basis for further investigation.

Healthcare organizations, unions, government, insurers, educational institutions, and researchers must continue to reduce patient handling risk for both healthcare workers and for patients. The SPH Survey™ is shown to be an easy way to reliably evaluate patient handling systems and workplace culture, target improvement initiatives, and continually monitor the level of patient handling risk in the workplace. Low-risk patient handling means high quality patient care, without endangering health and well-being.

INTRODUCTION

The core business of health care organizations is to deliver quality and cost-effective health care services to patients. This requires staff with knowledge, ability, equipment, and system support to deliver these services. The health and safety of both patients and staff is fundamental in determining if and how patient care activities are delivered. Low risk patient handling is consistent with quality care for patients, creating a safe workplace for staff, and legal requirements for employers to minimize

workplace hazards for their employees (National Back Pain Association in collaboration with the Royal College of Nursing, 1999, p. 25; New Zealand Department of Labour, 2002; Victorian WorkCover Authority, 2006, p. 3).

Management leaders who recognize that staff and patient health and safety are at the core of their business and enforce and support a minimal risk approach for their employees enjoy excellent health and safety outcomes – improved staff retention, financial savings, and improved patient care outcomes (Collins, Nelson, & Sublet, 2006, p. 5). Management leadership, commitment and communication set the expectations for a workplace culture that enables and supports health and safety. Where that commitment and communication is not consistently demonstrated, the default message, whether intended or not, is that health and safety is not important compared to other stated corporate priorities (Dyck & Roithmayr, 2004, pp. 511-512).

Tony Roithmayr, a work performance specialist, and I developed the Safe Patient Handling Survey™ to provide an evaluation tool for patient handling systems that includes workplace culture. Leading indicators in the Safe Patient Handling Survey™ quantify workplace culture and climate factors and specific elements that are critical to successfully implementing low-risk patient handling systems. These indicators are based on employees' perceptions of their work and workplace, effectively creating a warning system to identify high risk and allow corrective action to be taken before injuries happen. The indicators provide the evaluative evidence that healthcare organizations need to make patient handling risk reduction a priority (Börner & Roithmayr, 2007, pp. 662-663).

The study presented here builds on the work done using Roithmayr's Performance Maximizer™ model which was the foundation for the Great Safety Performance™ (GSP) model used in the electrical industry to reduce injury (Dyck & Roithmayr, 2004). The Safe Patient Handling Survey™ evolved from the GSP™, and the results from early testing of the SPH Survey™ in New Zealand showed promise that the tool could reliably evaluate patient handling system elements (Börner & Roithmayr, 2007, pp. 657-661).

This study seeks to confirm the validity, reliability and sensitivity of the Safe Patient Handling Survey™ to provide evidence that it could be used to reduce staff and patient injury related to patient handling.

Leading indicator of safety performance: “an index intended to forecast trends in safety performance” (Börner & Roithmayr, 2007, p. 638)

Lagging indicator of safety performance: “historical in nature, they are the results of past safety performance. Injury rates and lost time rates are examples” (Börner & Roithmayr, 2007, p. 638)

Organizational Climate: "employees' perception of the organization's culture" (Gershon, Stone, Bakken, & Larson, 2004, p. 35).

Organizational Culture: "norms, values, and basic assumptions of a given organization" (Gershon et al., 2004, p. 35).

System: "a set of interrelated parts that operate as a whole in pursuit of common goals" (Bartol & Martin, 1994, p. 55)

Safe Patient Handling Survey™ (SPH Survey™): based on the Performance Maximizer™ and adapted from the Great Safety Performance™ Model, it is "an online survey and analysis tool that measures specific leading indicators that show that conditions are in place to enable staff to perform safe patient handling practices in the workplace" (Börner & Roithmayr, 2007, p. 638). The indicators are: Safe Patient Handling Actions, Know what to do, be Able to work safely, be Equipped to work safely, Want to work safely, and have the workplace Interactions that support safe work. There is one section for employees and one for their employer.

METHOD

The Safe Patient Handling Survey™ was used to collect the perceptions from nursing staff on two similar units from two different hospitals for a three month period. The units used two different patient handling systems – one that was a complete patient handling system, and the other with a partially operating system. This was done purposely to allow for the investigation of comparisons.

The SPH Survey™ asked staff to rate how frequently they performed specific safe patient handling actions, how strongly they agreed or disagreed with 55 statements about Knowing how to do safe patient handling, being Able to do it, Equipped to do it, Wanting to do it, and how their workplace culture or Interactions supported them to handle patients safely. Staff were asked how often they or their patients were injured during patient handling, and how often they had verbal or physical violence directed at them. The unit managers on each unit completed the employer portion. They were asked how many injuries had been reported to them for the time period, and these were compared with employee answers in order to get an idea of how well reporting systems were working.

The research questions were:

1. How do scores on the Safe Patient Handling Survey™ correlate with incidents (staff injuries, patient injuries, and verbal and physical violence directed to staff by patients)? If SPH Survey™ scores correlate negatively with incidents (the higher (better) the score, the lower the incident rate and vice versa), this identifies incident risk and allows for prevention well *before* it happens.
2. Is the Safe Patient Handling Survey™ able to detect differences in the patient handling systems of two workplaces? If the Safe Patient Handling Survey™ is able to detect and quantify the differences between the two units, it is likely that it would also be able to detect the differences before and after an intervention on the same unit.

The SPSS statistical analysis was performed using Chi square, ANOVA comparison of means, Cronbach's alpha, and Pearson and Spearman's rho correlations in order to verify the validity and reliability of the SPH Survey™ as a tool to measure safe patient handling systems, analyze the correlation between SPH Survey™ scores and rates of patient and staff injury and violence incidents, and determine if the tool was able to detect differences in the patient handling systems used by the two units.

FINDINGS

The results showed that the SPH Survey™ had strong internal validity and reliability as a tool to measure safe patient handling systems.

Although the sample was small, a trend was evident that higher SPH cluster scores correlated with lower patient and staff injuries and incidents. The SPH Survey™ was able to detect considerable differences in the two systems of patient handling, even though both units had official reports of zero staff injuries. In addition, high risk practices and techniques were detected on both units which are likely to result in injury to both staff and patients. Both units now have specific target areas for improvement, and should be able to achieve the minimum of 90% in all SPH clusters, which would be evidence of a work environment that supports staff stay well and to deliver safe patient care.

Unit 2 scored higher on all but 3 items on the SPH Survey™, showed lower incidence of verbal and physical violence towards staff, and had lower staff and patient injuries. It was also interesting to note that Unit 2 scored considerably better than Unit 1 even with a much higher patient load per FTE (Unit 1:11.65 vs Unit 2:17.9). This suggests that effective patient handling systems may boost productivity as well as lower the risk to staff and patients.

CONCLUSIONS

The findings from the statistical analysis suggests that the SPH Survey™ is a valid and reliable way to easily detect both strengths and deficiencies in patient handling systems. It may also be possible to evaluate and monitor the level of injury risk to both patients and staff.

The findings provided specific areas for improvement for both units. From GSP Surveys™ done in other industries, we know that scores over 90% in all clusters reflect a solid health and safety system that is protecting employees and patients. Both units had the highest cluster scores in "Know" which reflects an emphasis by the organization on training. This training did not transfer completely into safe patient handling actions, however, as shown by the lower cluster score for PH Actions. This suggests that although staff feel they know what to do, they are not always doing it. The answer to why they do not carry out the safe patient handling actions can be

found in the "Want" and "Interactions" clusters where both units had the lowest scores. It is expected that improvements to the patient handling system as shown by scoring over 90% in all clusters, will result in lower violence incidents and injuries to staff and patients.

The study also provided a good foundation for further investigations using Great Safety Performance™ surveys adapted to different industries.

REFERENCES

- Bartol, K., & Martin, D. (1994). *Management* (2 ed.). New York: McGraw-Hill.
- Börner, H., & Roithmayr, A. (2007). Safe patient handling: a global issue. In D. Dyck (Ed.), *Occupational Health and Safety: Theory, Strategy and Industry Practice*. Markham: LexisNexis Canada Inc.
- Collins, J., Nelson, A., & Sublet, V. (2006). *Safe Lifting and Moving of Nursing Home Residents*. Retrieved June 9, 2008, from <http://www.cdc.gov/niosh/docs/2006-117/>.
- Dyck, D., & Roithmayr, A. (2004). Great Safety Performance: an improvement process using leading indicators. *Journal of the American Association of Occupational Health Nurses*, 52(12), 511-520.
- Gershon, R. R. M., Stone, P. W., Bakken, S., & Larson, E. (2004). Measurement of organizational culture and climate in healthcare. *Journal of Nursing Administration*, 34(1), 33-40.
- National Back Pain Association in collaboration with the Royal College of Nursing. (1999). *The guide to the handling of patients (4th ed.)*. Teddington, UK: National Back Pain Association in collaboration with the Royal College of Nursing.
- New Zealand Department of Labour. (2002). Health and Safety in Employment Act 1992 including amendments made by the Health and Safety and Employment Amendment Act 2002 and the Crown Organisations (Criminal Liability) Acts 2002. Retrieved May 29, 2008, from <http://www.osh.govt.nz/order/catalogue/hseact-text/index.shtml>

Short Personal Biography

Heidi Borner MN (candidate), COHN(C), BN, RN has 17 years international experience working with health and safety systems in all types of businesses, as well as developing best practice and policy. She knows that workplace issues are more likely to get attention when they can be measured and monitored. But current methods of evaluating the effectiveness and cost:benefit of programs and interventions are sorely lacking, and leave out the very thing that determines the success or failure of programs – the safety culture. Do all these policies, programs and activities actually work? What does success even look like?

Heidi Master's research involved a perception survey to measure workplace culture and climate to evaluate patient handling systems effectiveness. The project resulted in opportunity for staff and managers to engage constructively in making targeted and realistic improvements.

Heidi is expanding this research to other industries to show that it is fundamental for organizations, associations, insurers and compliance bodies to methodically measure employee's perceptions of health and safety interventions in quantifying the success of health and safety systems.